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**GUIDELINES FOR SCIENTIFIC AND TECHNICAL PAPERS BY
WESTERN REGION EMPLOYEES**

NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>.

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SUMMARY OF REVISIONS: This directive supersedes NWSI 20-103, Guidelines for Scientific and Technical Papers by Western Region Employees dated March 17, 2007. Changes were minor, mostly to streamline guidance.

Signed 02/14/19
Dr. Grant Cooper Date
Director, Western Region

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1. Introduction: The purpose of this supplement is to establish policy and procedures to be followed in the National Weather Service (NWS) Western Region (WR) concerning the submission, review, and subsequent publication of Technical Attachments, Technical Memorandums, Professional Conference abstracts/papers (oral and/or written), and Formal Publications.

2. Policy and Procedures: Key points:

- All conference abstracts and professional papers (e.g. American Meteorological Society (AMS), National Weather Association (NWA), etc.) must be submitted to WR Science Technology Infusion Division (STID) for Regional Director (RD) approval prior to final submission.
- Participation in professional conferences must receive conference and travel approval **prior** to making any formal travel plans or commitments.

2.1 Overview:

2.1.1 General Comments on Various Publishing Options:

- We encourage employees to carry out scientific studies and investigations and communicate the results to others.
- There are four usual avenues of documentation and distribution.
 - Three of them, Technical Attachments, Technical Memorandums, and conference papers/poster sessions are "informal publications" because they are not subject to external (to the NWS) peer review. These papers/abstracts allow others to learn from the local office research.
 - The fourth avenue is a formal publication submitted to a professional journal or scientific media. Journals require rigorous peer review and the process generally takes more time to complete.

2.1.2 Quality of Work: It is the responsibility of the author to convey the message in a concise and logical manner. In addition, figures must be clean and legible. The local office has final responsibility for manuscript and figure quality.

2.1.3 The Role of Supervisors: Meteorologists in Charge (MIC), Hydrologists in Charge (HIC), and Division Chiefs should encourage local research studies. If a study warrants, supervisors should encourage an employee to carry the work through to publication.

- All abstracts/presentations/manuscripts must be reviewed and approved by both the MIC/HIC/Division Chief prior to submission to WR STID.
 - The MIC/HIC/Division Chief can delegate this review and approval process to the Science and Operations Officer (SOO)/Development and Operations Hydrologist (DOH).

2.1.4 The Role of STID: It is STID's responsibility to provide clearance for conference abstracts and papers, as well as for manuscripts intended for formal publication. STID will also help identify individuals who are submitting conference papers for travel/attendance approval by the RD office.

2.2 Technical Attachments and Technical Attachment-Lites:

2.2.1 Purpose and Philosophy: Technical Attachments (TA) and TA-Lites are posted on the STID Google Site. The TA is the appropriate media for (1) preliminary results of on-going research, (2) short case studies of significant events, (3) informational articles, and (4) documentation of forecast techniques. These publications are viewed by Western Region offices, other regions, NWS Headquarters, National Oceanic and Atmospheric Administration (NOAA) offices, and some external groups (universities, for example).

TA are intended to provide a mechanism for authors to quickly distribute information to a limited (but specific) audience of operational meteorologists and hydrologists. They afford the author more freedom than the other forms of publication. While TA are reviewed for scientific accuracy and technical correctness, the level of scrutiny is lower than that of other types of publications.

2.2.2 Format: As a general rule, TA should be no longer than eight double-spaced pages (text and figures included). Quality of content is much more important than length; many of the best TAs are only one to two pages long. Submissions should be in Word format.

2.2.3 The Review Process: A manuscript review benefits both the author and the reader. The result is a more readable and scientifically correct product.

STID will provide a final review of manuscripts submitted through the MIC/HIC/Division Chief. The purpose and philosophy of TA are kept in mind while a manuscript is being reviewed.

2.3 Technical Memorandum:

2.3.1 Purpose and Philosophy: A Technical Memorandum (TM) is used to informally publish (1) results of work in progress, (2) detailed case studies of hydrological or meteorological events, (3) documentation of technical procedures and practices which have interest beyond the local area, and (4) presentations which require the presentation of large amounts of data, tables, computer algorithms, and/or figures. The TMs are available to WR offices, other regions, NWS Headquarters, NOAA offices, research laboratories, and some external groups (universities, for example) via the STID Google Site.

2.3.2 Format: There is no page limit on TMs, but as with any formal scientific or technical document, authors should be concise. The manuscript should be in a format similar to refereed journals, such as Weather and Forecasting. Manuscripts submitted to STID for review should be double-spaced, and include an abstract. Submission should be in Word format.

2.3.3 The Review Process: STID will review manuscripts submitted through the MIC/HIC/Division Chief and may solicit an additional review for an appropriate subject-matter expert. Review will be made with the purpose and philosophy of the TM in mind. Ideally, the initial review process will take about four to six weeks.

2.4 Conference Papers:

2.4.1 Purpose and Philosophy: Professional conferences are a means by which research results are shared with the wider scientific community. Many conferences offer poster sessions as well as the traditional presentations. It is up to the author to decide which option is most appropriate.

Important note: Financial support for attending conferences is generally from the office travel funds (or as directed) with prior approval by the RD. Personnel should avoid making any commitments or incurring any expenses until formal travel approval is received from the RD Office.

2.4.2 Abstract Format: Professional publications such as the Bulletin of the American Meteorological Society, or the National Weather Digest will frequently list a "Call for Papers" or "Call for Abstracts" which describes the format, procedures, and deadlines for papers submitted to the conference for presentation.

2.4.3 Approval Process:

Abstract Submission: The author (through the MIC/HIC/Division Chief approval process) must submit a copy of the abstract to STID, for approval prior to submission to the conference. Sending a copy of the abstract to STID also will indicate to the Region that the author wishes to attend the conference.

After the Abstract is accepted by the professional organization -- presentation preparation: After an abstract is accepted for a conference and travel approved by the RD office, the presenter will develop a poster or presentation. The MIC/HIC/Division Chief must approve the presentation/poster.

If the MIC/HIC/Division Chief is concerned about the content, the MIC/HIC/Division Chief should seek feedback from STID.

2.5 Formal Publications:

2.5.1 Purpose and Philosophy: Formal publications in professional journals such as Weather and Forecasting receive international distribution among the scientific community. Each journal usually has a statement of purpose listed on its inside cover. Authors must determine which journal would be most appropriate for publication of their work. STID can be consulted if there are any questions.

An article in a professional journal is the appropriate medium for (1) final results of a project that is of broad-based scientific interest, (2) case studies of meteorological or hydrological events, and (3) documentation of new techniques relevant to both NWS and non-NWS personnel.

2.5.2 Format: Most professional journal's web sites contain instructions on required format and content. The author should follow these instructions.

2.5.3 The Review Process: Manuscripts for formal publication must be sent to STID (through the MIC/HIC/Division Chief) for review prior to their submission to a professional journal.

- The primary purpose of this review is to ensure that statements are in agreement with scientific practice and NWS policies and procedures.
- This also serves to allow the Region to locate budget resources for the publication of the paper.

After review and approval by the RD, it is the author's responsibility to submit the final manuscript to the organization (after MIC/HIC/Division Chief final approval).

Most journals solicit three rigorous (and often anonymous) reviews by "peers" chosen by the editor. After receiving the reviews, the editors will either accept the paper outright, accept it with pending revision, or reject it (unconditional acceptance is rare). During the revision process, STID (and the SOO, DOH) can assist the author. The revised manuscript and comments are then re-submitted to STID for review prior to the final submission to the journal.

2.6 Final Comments:

This supplement describes the review and approval for WR personnel to publish scientific/technical papers or submit an abstract to attend a conference. If there are questions, please do not hesitate to contact WR STID.